

## CLAIMS

1. A method for producing a semi-conducting device comprising at least a layer doped with a doping agent and a layer of another type deposited on said doped layer in a single reaction chamber, wherein the deposition steps of  
5 said layers are separated by an operation for avoiding the contamination by the doping agent of said another layer.
2. The method of claim 1, wherein said operation comprises a dosing of the reaction chamber with a compound able to react with the doping agent.
- 10 3. The method of any of claims 1 and 2, wherein said operation comprises a dosing of the reaction chamber with a vapour or gas comprising water, methanol, isopropanol or another alcohol.
4. The method of any of claims 1 and 2, wherein said operation comprises a dosing of the reaction chamber with a vapour or gas comprising ammonia,  
15 hydrazine or volatile organic amines.
5. The method of any of claims 3 and 4, wherein said dosing is performed at around 0.05 to 100 mbar and between 100 and 350°C for less than 10 minutes.
6. The method of claims 1 to 6, wherein the doped layer is a p-doped layer.
- 20 7. The method of claims 1 to 6, wherein the doped layer is a n-doped layer.
8. The method of claim 6, wherein said operation is followed by the deposition of a buffer layer on the p-layer.
9. The method of any of claims 2 to 8, wherein said dosing is followed by a pumping at high vacuum and between 100 and 350°C for less than 5 minutes.

10. A semi-conducting device comprising at least a layer doped with a doping agent and a layer of another type deposited on said doped layer, wherein the interface between said layers contains traces of oxygen as a result of a treatment for avoiding the contamination of said another layer by the doping agent.
11. The semi-conducting device of claim 10, wherein the content of oxygen is higher than  $10^{19}$  atoms.cm<sup>-3</sup>.
12. A semi-conducting device comprising at least a layer doped with a doping agent and a layer of another type deposited on said doped layer, wherein the interface between said layers contains traces of nitrogen as a result of a treatment for avoiding the contamination of said another layer by the doping agent.
13. The semi-conducting device of claim 12, wherein the content of nitrogen is higher than  $10^{19}$  atoms.cm<sup>-3</sup>.